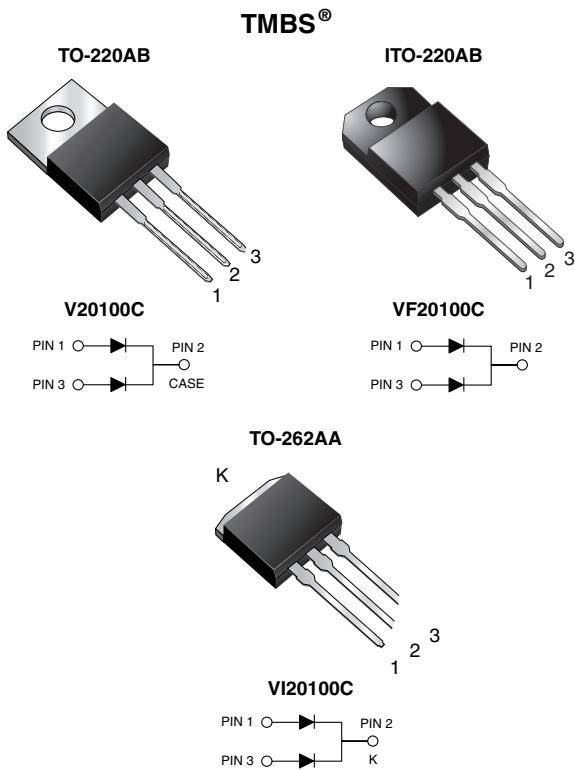


Dual High Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low V_F = 0.50 V at I_F = 5 A



FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for TO-220AB, ITO-220AB, and TO-262AA package)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency converters, switching power supplies, freewheeling diodes, OR-ing diode, DC/DC converters, and reverse battery protection.

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, and TO-262AA
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 10 A
V_{RRM}	100 V
I_{FSM}	150 A
V_F at I_F = 10 A	0.58 V
T_J max.	150 °C
Package	TO-220AB, ITO-220AB, TO-262AA
Diode variation	Common cathode

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	V20100C	VF20100C	VI20100C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	100			V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	20			A
		10			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	150			A
Non-repetitive avalanche energy at T_J = 25 °C, L = 60 mH per diode	E_{AS}	150			mJ
Peak repetitive reverse current at t_p = 2 µs, 1 kHz, T_J = 38 °C ± 2 °C per diode	I_{RRM}	1.0			A
Voltage rate of change (rated V_R)	dV/dt	10 000			V/µs
Isolation voltage (ITO-220AB only) from terminal to heatsink t = 1 min	V_{AC}	1500			V
Operating junction and storage temperature range	T_J , T_{STG}	-40 to +150			°C

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Breakdown voltage	$I_R = 10 \text{ mA}$	$T_A = 25^\circ\text{C}$	V_{BR}	105 (minimum)	-	V	
Instantaneous forward voltage per diode	$I_F = 5 \text{ A}$	$T_A = 25^\circ\text{C}$	$V_F^{(1)}$	0.55	-	V	
	$I_F = 10 \text{ A}$			0.65	0.79		
	$I_F = 5 \text{ A}$	$T_A = 125^\circ\text{C}$		0.50	-		
	$I_F = 10 \text{ A}$			0.58	0.68		
Reverse current per diode	$V_R = 70 \text{ V}$	$T_A = 25^\circ\text{C}$	$I_R^{(2)}$	17	-	μA	
		$T_A = 125^\circ\text{C}$		5.3	-	mA	
	$V_R = 100 \text{ V}$	$T_A = 25^\circ\text{C}$		-	800	μA	
		$T_A = 125^\circ\text{C}$		12	25	mA	

Notes

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width $\leq 40 \text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	V20100C	VF20100C	VI20100C	UNIT
Typical thermal resistance per diode	$R_{\theta\text{JC}}$	2.8	5.5	2.8	$^\circ\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	V20100C-E3/4W	1.881	4W	50/tube	Tube
ITO-220AB	VF20100C-E3/4W	1.75	4W	50/tube	Tube
TO-262AA	VI20100C-E3/4W	1.452	4W	50/tube	Tube

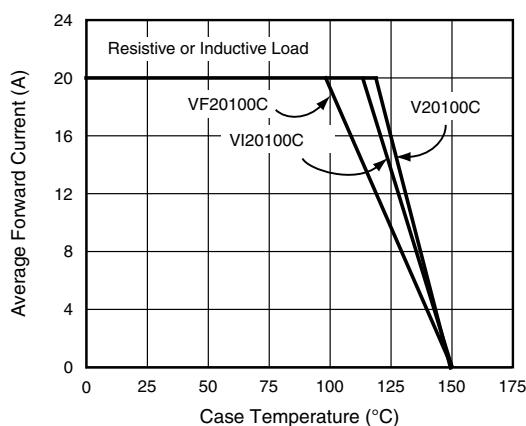
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

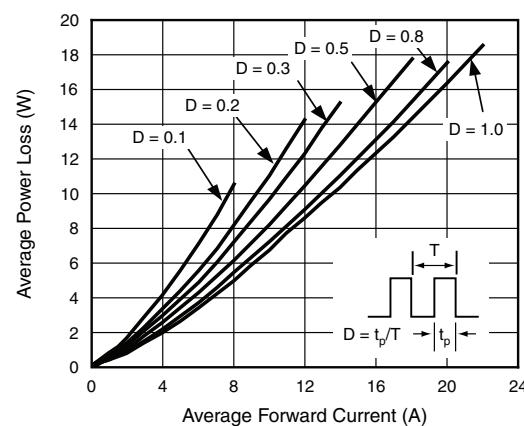


Fig. 2 - Forward Power Loss Characteristics Per Diode

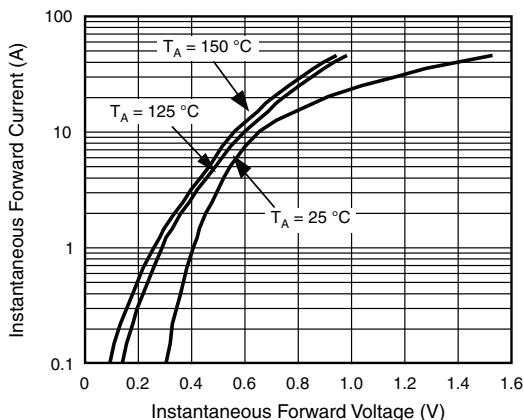


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

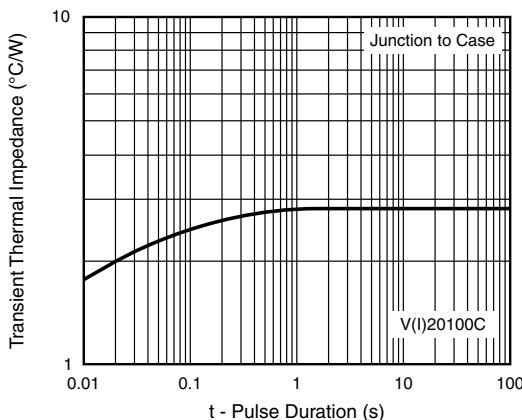


Fig. 6 - Typical Transient Thermal Impedance Per Diode

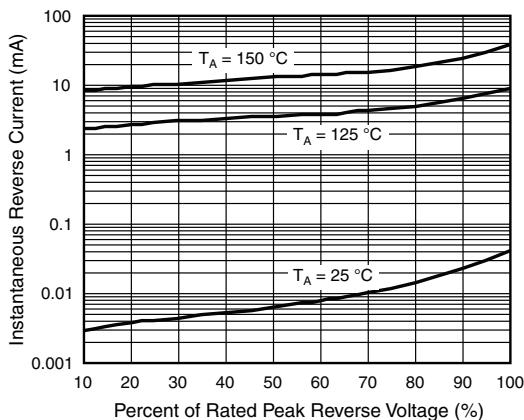


Fig. 4 - Typical Reverse Characteristics Per Diode

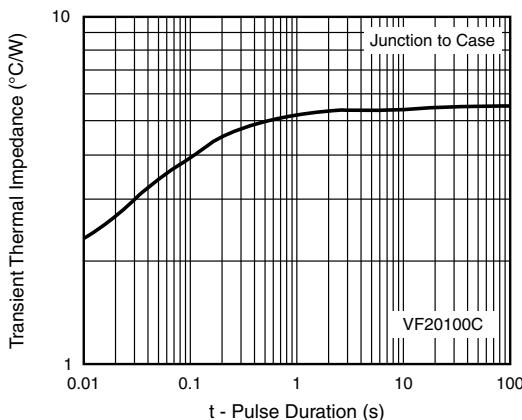


Fig. 7 - Typical Transient Thermal Impedance Per Diode

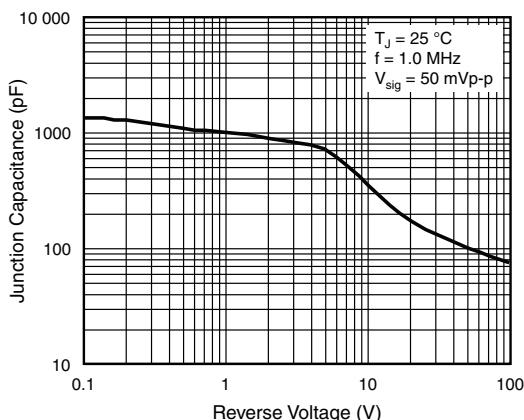
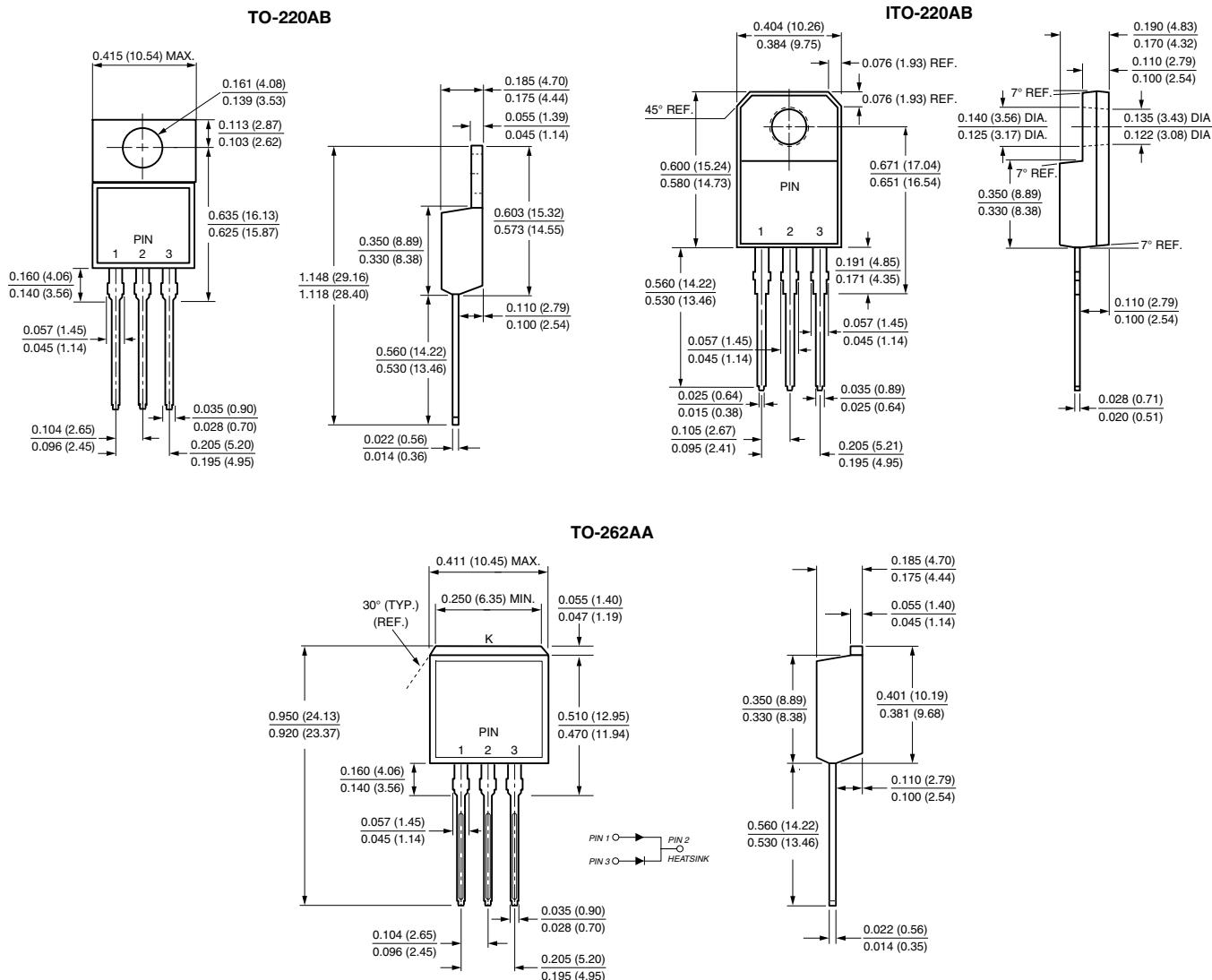


Fig. 5 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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